



Federal Aviation
Administration

Analysis of U.S. Civil Helicopter Accidents

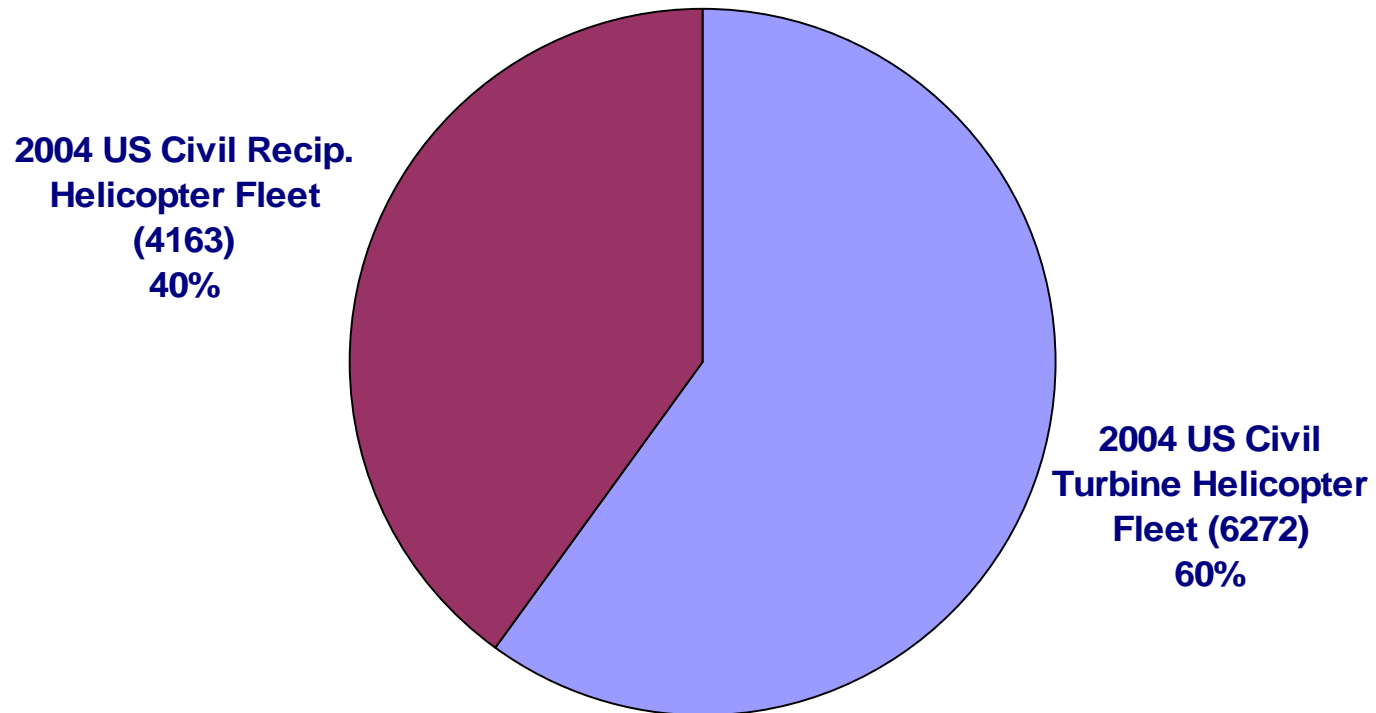


Presented to: Heli-Expo 2006, Safety
Symposium
by: Dave Downey and Matt Rigsby

Heli-Expo 2006 Safety Symposium February 25



US Civil Helicopter Fleet Size (Turbine & Recip.) 2004



Data Source: 2005 HAI Helicopter Annual

U.S. Civil Rotorcraft Safety Trends

January 2000 – December 2005

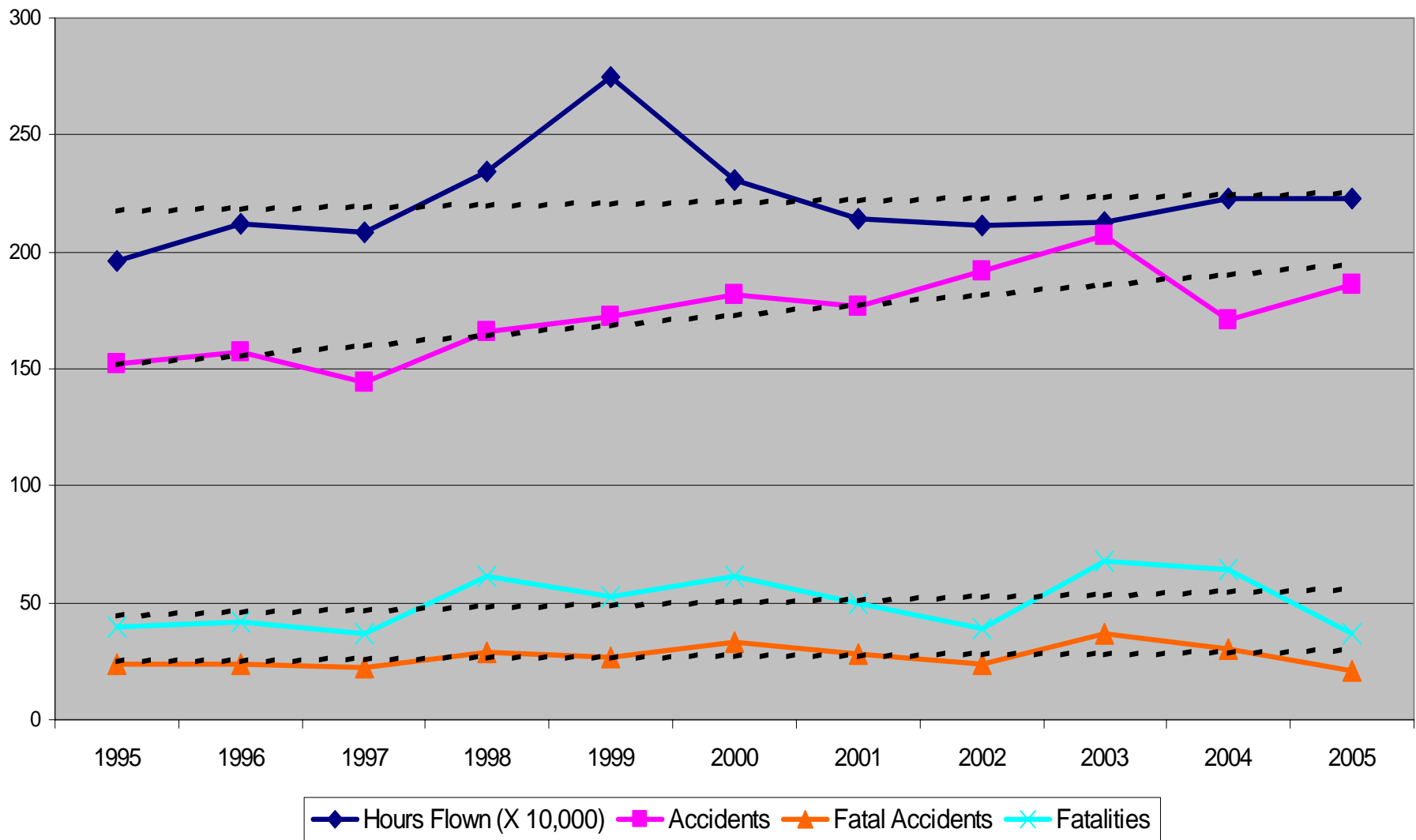
| <u>Civil Helicopter Accidents:</u> | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| Civil helicopter accidents*: | 182 | 177 | 192 | 207 | 171 | 186 |
| Fatal helicopter accidents: | 33 | 28 | 24 | 37 | 30 | 21 |
| <u>Operation Types:</u> | | | | | | |
| Air Medical (Part 91/135): | | | | 18 | 13 | 15 |
| Gulf of Mexico (Part 91/135): | | | | 16 | 10 | 9 |
| Air Tour Operators: | | | | 6 | 4 | 7 |

Data Sources: NTSB, HAI, and HSAC

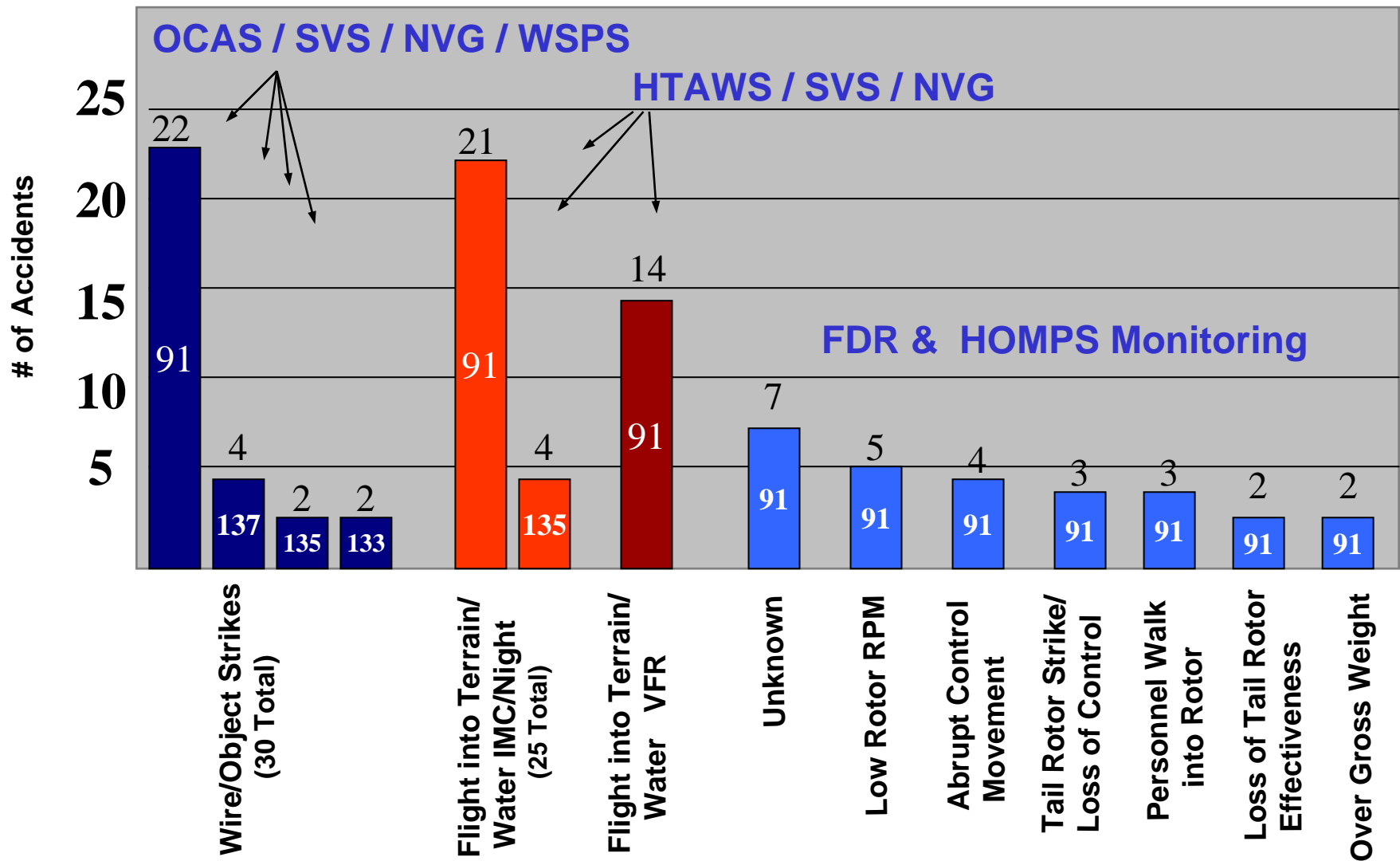
* - numbers are based on calendar years.



US Civil Type Certificated Rotorcraft Accident Trends 1995- 2005



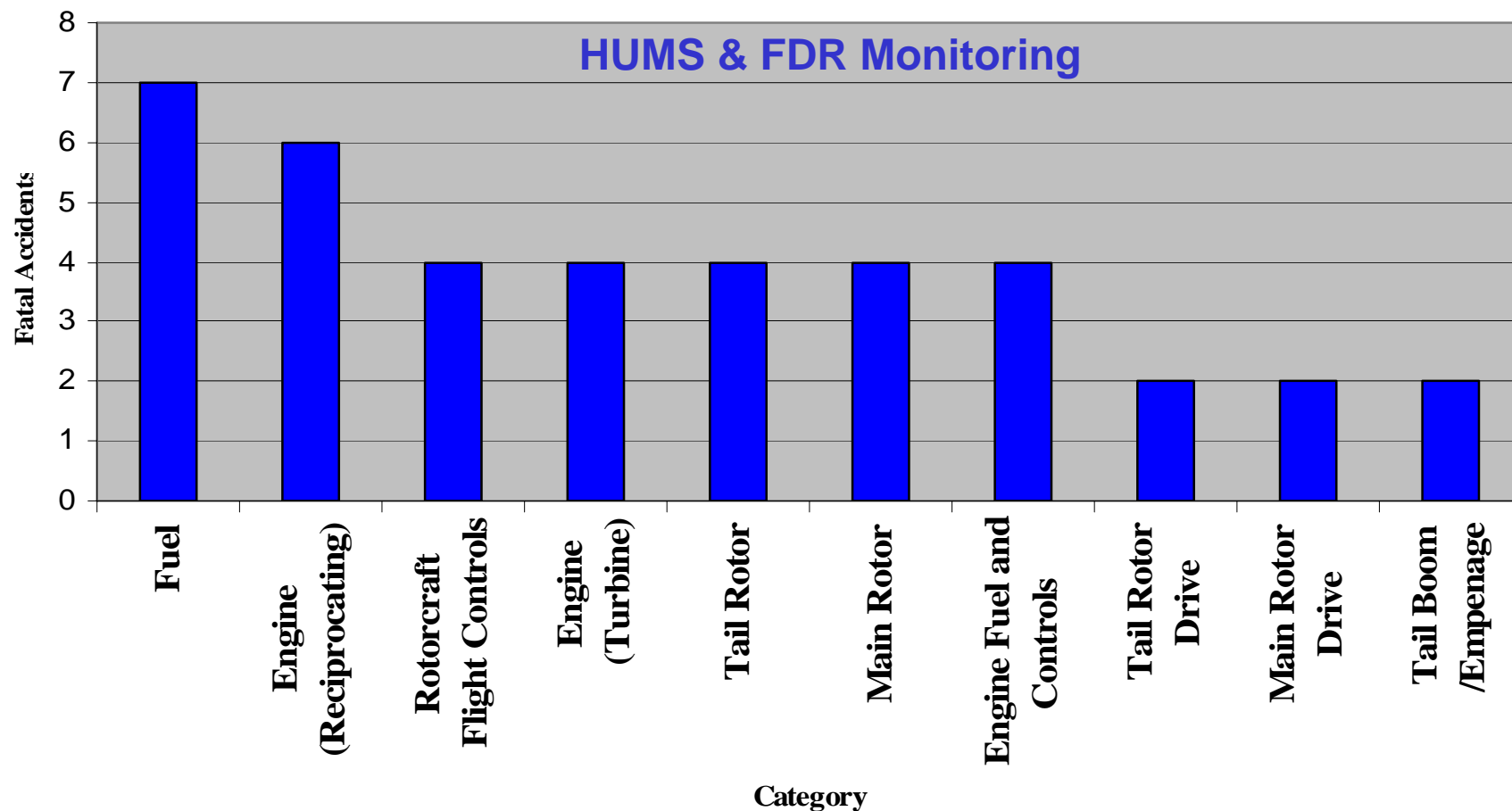
Top Operational Causes of Fatal Rotorcraft Accidents 1994 - 2004



Data Source: FAA ASAP



Top Ten Mechanical Causes of Fatal Rotorcraft Accidents 1994 - 2004



Data Source: FAA ASAP (SDR Database)

FY2006 (Oct. – Feb 22) US Rotorcraft Accidents

Total Rotorcraft Accidents – 53 (10 Fatal Accidents)

Same period, Oct.04' – Feb. 2005; 54 total helicopter accidents 7 fatal accidents.

Accident Operations Summary

- 33 – Part 91 (Includes some EMS and Gulf operations)
- 11 – Part 135 (3-Air Taxi, 3-EMS, **4-Air Tour**, 1-Gulf)
- 10 – Fatal Accidents
- 16 – Fatalities

Data Sources: FAA, NTSB, HAI, and HSAC



Accident Reduction / Prevention

What Can Be Done To Prevent Accidents?

- Reporting of Service Difficulties (SDRs)
 - SDRs are analyzed for safety criticality
 - Determines the need for SAIIBs and ADs
 - Provides means for identifying issues with OEMs

Contact Information:

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Gulf of Mexico Operations

Gulf of Mexico Operations Summary

- 25 helicopter operators, @ 600 helicopters
- 5000 - 8000 flights per day
- 4000 “Non-Public” landing sites
- 8 hour flying days with >100 take-offs & landings
- Deep water Exploration Increasing
- Predominate VFR operations w/some Limited IFR/Night Ops

GULF OF MEXICO OFFSHORE HELICOPTER OPERATIONAL DATA SUMMARY

- Total of 561 Rotorcraft Operating GOMEX (2004 Stats)
- 2,329,064 Pax Carried for Hire
- 361,514 Hrs flown by 22 operators
- 1,270,863 Flights taken
- 17 minutes average flight time

| Civil Rotorcraft Accidents: | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006* |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Gulf of Mexico (Part 91/135): | 3 | 9 | 9 | 8 | 6 | 16 | 10 | 9 | 1 |

* Year to date.

Data extracted from voluntary input of 22 helicopter operators Gulf of Mexico

GULF OF MEXICO OFFSHORE HELICOPTER OPERATIONAL DATA SUMMARY

- Night flight accounts for less than 3% of the Gomex flight hours
 - No Radar coverage
 - Limited Comm's and WX reporting
- In the last five years, there have been 4 night accidents
 - 3 of the 4 events were fatal
- Accounted for 8% of the total accidents and 38% of total fatalities (12 of the 32 fatalities)

* Data extracted from voluntary input of 22 helicopter operators Gulf of Mexico





Helicopter Emergency Medical Services (HEMS)

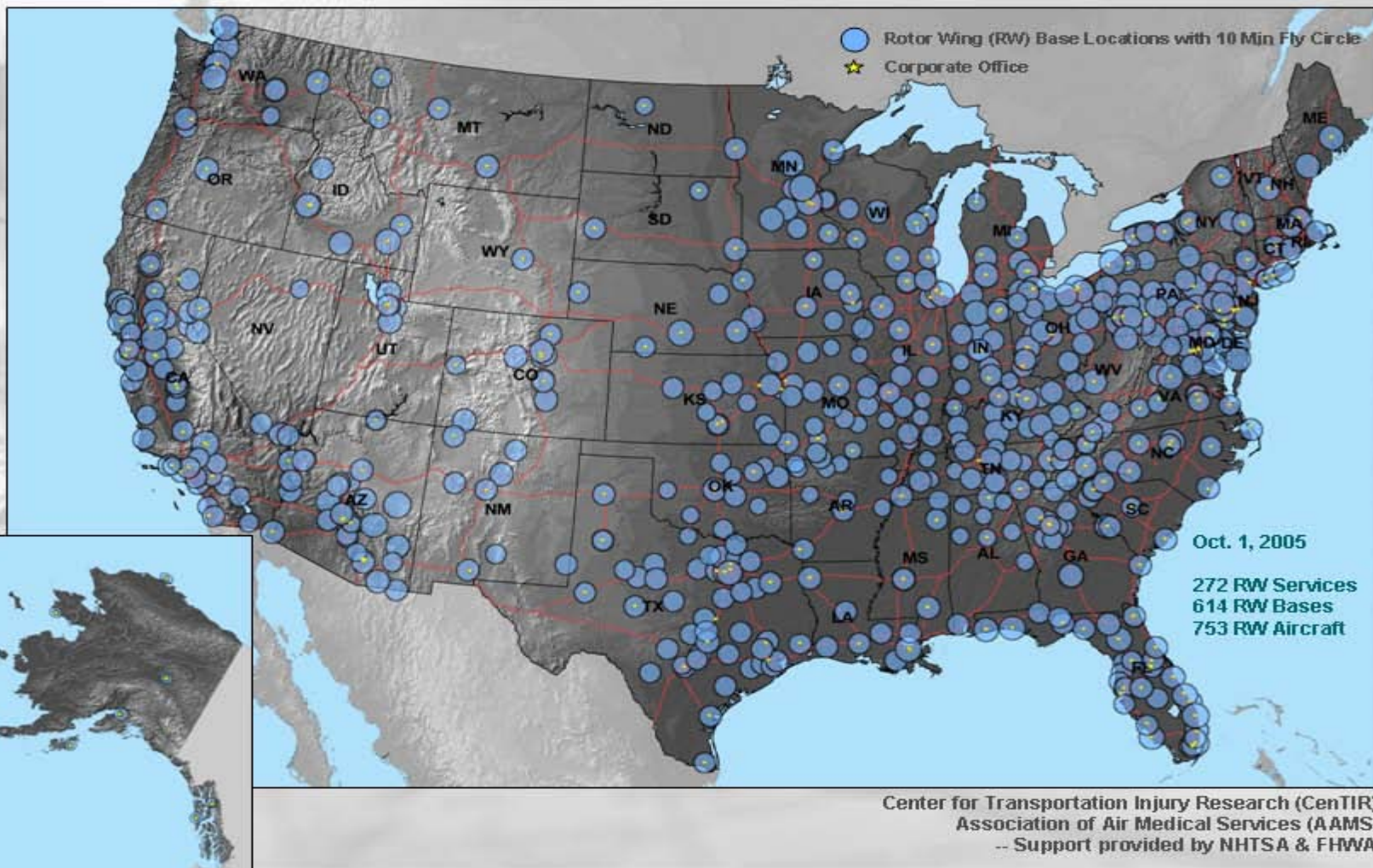
Helicopter Emergency Medical Services (HEMS) Growth

- Currently, there are approximately 750 RW aircraft flying HEMS, that number is increasing daily.
- Approximately 300,000 patients transported annually.
- An EMS aircraft takes off every 90 seconds in the United States.
- No formal method of tracking, hours, missions, usage.
- Single engine, non-IFR certified a/c is a large portion of HEMS.

Atlas & Database of Air Medical Services

Third Edition National Air Medical Services GIS Database

ADAMS 2005



U.S. HEMS Rotorcraft Accidents 98' – 06'

| HEMS Accidents | # of Accidents |
|----------------|----------------|
|----------------|----------------|

| | |
|-----------------------------------|----|
| HEMS analysis Jan 1998 – Dec 2004 | 85 |
| HEMS Fatal Accidents 98-04 | 27 |

| | |
|-----------------------|----|
| Night HEMS Accidents | 45 |
| Night Fatal Accidents | 21 |

| | |
|--|----|
| HEMS Accidents Involving Part 91 Operations (18 fatal) | 59 |
| HEMS Accidents Involving Part 135 Operations (9 fatal) | 26 |

| Civil Rotorcraft Accidents: | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006* |
|-----------------------------|------|------|------|------|------|------|------|------|-------|
| Air Medical (Part 91/135): | 7 | 10 | 12 | 10 | 13 | 18 | 13 | 15 | 7 |

* FY 06 to date accidents

Data sources: NTSB Accident Database, FAA EMS Task Force Analysis



Battle Mt., NV 2004

5 Fatal



Santa Rosa, FL October 2004

3 Fatal



FAA & EMS Community Initiatives

- ***CFIT, night operations/WX, and lack of operational control*** are predominant factors in the reviewed accidents.
- **Notice 800.293**, Helicopter Emergency Medical Service Operations
- **Notice 8000.301** Operational Risk Assessment for Helicopter Emergency Medical Services
- **AC No. 00-64** Air Medical Resource Management

FAA & EMS Community Initiatives

- **Notice 8000.307** Special Emphasis Inspection Program for Helicopter Emergency Services
- **HBAT 06-02** HEMS Loss of Control (LOC) and Controlled Flight Into Terrain (CFIT) accident avoidance programs
- **HBAT 06-01** Helicopter Emergency Services; OpSpec A021/A002 Revisions



Questions?

